

## Stability Analysis of Rabies Model with Vaccination Effect and Culling in Dogs

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**Abstract :** This paper considers a deterministic model for the transmission dynamics of rabies virus in the wild dogs-domestic dogs-human zoonotic cycle. The effect of vaccination and culling in dogs is considered on the model, then the stability was analysed to get basic reproduction number. We use the next generation matrix method and Routh-Hurwitz test to analyze the stability of the Disease-Free Equilibrium and Endemic Equilibrium of this model.

**Keywords :** stability analysis, rabies model, vaccination effect, culling in dogs

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